



IR-674

PLURAL POLYGON SOURCE PATTERN FOR MOSFET

ABSTRACT OF THE DISCLOSURE

A high power MOSFET has a plurality of closely packed polygonal sources spaced from one another on one surface of a semiconductor body. An elongated gate electrode is exposed in the spacing between the polygonal sources and cooperates with two channels, one for each adjacent source electrode, to control conduction from the source electrode through the channel and then to a drain electrode on the opposite surface of the semiconductor body. The conductive region adjacent the channel and between adjacent sources is relatively highly conductive in the section of the channel adjacent to the surface containing the sources. The polygonal shaped source members are preferably hexagonal so that the distances between adjacent sources is relatively constant throughout the device. Each polygonal region has a relatively deep central portion and a shallow outer shelf portion. The shelf portion generally underlies an annular source region. The deep central portion underlies an aluminum conductive electrode and is sufficiently deep that it will not be fully penetrated by aluminum spiking.